

REMARKS

Favorable consideration and allowance are respectfully requested for claims 3, 4, 10, 11, and 24-27 in view of the following remarks.

In the Office Action dated January 6, 2003, claims 3, 4, 10, 11, and 24-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,625,465 ("Kirt") in view of U.S. Patent No. 5,691,004 ("Palazzolo"); claims 3, 4, 10, 11, and 24 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,622,753 ("Shepley"); and claims 25-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shepley. These rejections are respectfully traversed.

Rejection based on Kirt and Palazzolo

According to the Examiner, Kirt fails to disclose "1) thermally spraying a layer to the surface of the hollow body, i.e. engine cylinder bore, without prior degreasing or cleaning and 2) having 'a roughness value of from 25 to 65 um.'" Office Action at 3.

Indeed, Kirt does not teach or suggest any further processing steps subsequent to using a hand-held electric drill connected to a honing tool.

Kirt is silent regarding the claimed roughness value and the limitation "thermally spraying a layer onto the surface, without prior degreasing or cleaning," as is recited in independent claim 24, and "directly applying a thermally sprayed tribological layer to the surface, without prior degreasing or cleaning" as is recited in independent claims 25-27.

As set forth in our last response, Palazzolo does not cure the deficiencies of Kirt. Palazzolo discloses a method of treating a light metal cylinder bore wall to receive a thermally-sprayed metallic coating. Palazzolo's method comprises:

(a) honing the wall . . . , the honing being carried out with the use of a machining coolant to prevent burnishing of the walls; (b) either concurrently or shortly after step (a), washing the honed surface with a hot alkaline solution comprising (i) a non-soaping aluminate agent that produces a protective residue on the walls, and (ii) surfactants that facilitate wetting of the walls even when some steam bubbles may be present; (c) rinsing the washed surfaces without disturbing said residue; and (d) thermally spraying a metallic bond coat on said honed and washed surface to render a [sic] adhesion between said coating and prepared surface that is at least 2800 psi.

Col. 1, l. 60 through col. 2, l. 8 (emphases added). Thus, the surface to be coated is first treated in a cutting manner and employs a coolant to prevent heating up the walls. A dry removal of material, as required by our invention, is therefore not taught by Palazzolo. Thus, any combination of Kirt and Palazzolo would require at least the steps of using a machining coolant, washing with a cleaning solution after roughening, and rinsing the washed surfaces prior to application of a thermally-sprayed layer. The Palazzolo method cannot be said to be without prior degreasing or cleaning. As such, neither Kirt nor Palazzolo teaches or suggests directly applying a thermally-sprayed tribological layer to the surface of the cylinder bore, without cleaning or degreasing. Thus, it would not have been obvious for one of ordinary skill in the art to practice the claimed processes in view of the teachings of Kirt and Palazzolo.

The Examiner states that Palazzolo "teach[es] that after the honing/dry-cutting step the interior surface of the hollow body is thermally sprayed with a coat

in order to increase the wear resistance and the lubricity of the hollow body.” Office Action at 3. By doing so, the Examiner ignores the second part of step (a), above, use of a machining coolant, step (b), above, the washing step, and step (c), above, the rinsing step. Such disregard of the full teachings of a reference is improper.

According to the Federal Circuit (emphasis in original):

It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art.

Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 448, 230

USPQ2d 416 (Fed. Cir. 1986) (warning against taking a portion of a reference out of context and quoting In re Wesslau, 353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965)). The Federal Circuit vacated the lower court’s ruling of obviousness and stated that it “failed to consider the [prior art patent] in its entirety and thereby ignored those portions of the reference that argued against obviousness.” Id. Here, the Examiner commits the same error by ignoring the machining coolant, washing and rinsing steps taught by Palazzolo.

The Examiner notes col. 5, lines 38-43, for the proposition that “the step of thermally spraying a layer onto the surface can be done without prior degreasing or cleaning.” Office Action at 3. In the context of this paragraph, Palazzolo teaches that the elimination of certain steps would provide an inferior product, and that, on the other hand, the “use of a washing and residue leaving solution and use of a bond coat create a synergistic adherence effect.” Col. 5, lines 27-28. As such, there is no motivation to conduct a method without the washing and cleaning steps, as

Pallazolo teaches away from these steps and provides evidence of the ineffectiveness of such. Any contrary conclusion is at odds with the above-discussed, Bausch & Lomb holding which insists that a reference's teaching not be taken out of context. Here, Pallazolo discloses not to do what the Examiner concludes would have been obvious. Palazzolo fails to motivate one to employ the claimed invention.

The combination Kirt and Palazzolo do not teach the claimed invention. Withdrawal of the rejection of claims 3, 4, 10, 11, and 24-27 is respectfully requested.

Rejections based on Shepley

Claims 3, 4, 10, 11, and 24-27 were rejected based on Shepley. As set forth in the last response, Shepley discloses a method for cutting and preparing a cylindrical bore surface, having a roughness of from 0.5 to 17mm, onto which a coating is thermally applied. Shepley does not mention that its cutting and coating steps may be performed "without prior degreasing or cleaning" as required by the claimed invention. Indeed, Shepley fails to teach the special advantage of instant invention—that is, the elimination of a lubricant or cooling lubricant. As such, Shepley cannot teach dry cutting without a lubricant and thermally spraying a layer without prior degreasing or cleaning based on silence alone. Furthermore, in 1996, when the application which matured into the Shepley patent was filed, lubricants and cooling lubricants were state of the art methods. Because the state of the art processes utilized lubricants and Shepley is silent on this issue—which is

the very improvement disclosed by applicants—Shepley cannot be interpreted to teach the absence of lubricants, degreasing or cleaning. Such an interpretation is not supported by Shepley or the state of the art in at the time the Shepley patent was filed.

CONCLUSION

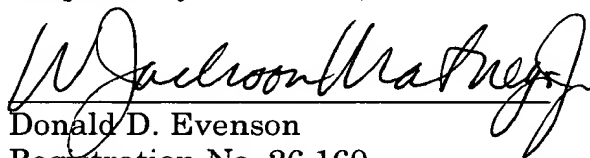
In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response; please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #225/48098).

May 6, 2003

Respectfully submitted,



Donald D. Evenson
Registration No. 26,160
W. Jackson Matney, Jr.
Registration No. 39,292

CROWELL & MORING LLP
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844